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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/764,746

01/18/2001

Ying Huang

481340010032

7984

7590

04/27/2005

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EXAMINER

JAIN, RAJ K

ART UNIT

PAPER NUMBER

2664

DATE MAILED: 04/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/764,746

Applicant(s)

HUANG ET AL.

Examiner

Raj K Jain

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chen (US005615298A) in view of Gustafsson et al. (US006459914B1).

Regarding claim(s) 1 and 3, Chen discloses a system and method for speech coding experiencing frame erasure--that is, the loss of a group of consecutive bits in the compressed bit-stream which group is ordinarily used to synthesize speech (see abstract and Fig 1 (100)). The system comprises of;

storing successive voice packets of the packetized voice signal within a buffer 110 (see Fig 1 and col 7 lines 33-50; new speech samples are successively stored in buffer 110 overwriting the previous set, see also claims 1 and 6);

detecting packet loss or missing voice packets via the decoder of Fig 1 not receiving a frame for decoding (see Fig 1, cols 1 lines 39-50, col 4 lines 34 -55, wireless networks use frame erasure to detect packet loss, which is similar to packet loss in packet-switched networks);

implementing filter with appropriate transfer functions to be used to enhance perceptual quality of a signal (see col 20 line 25 – col 21 line 17, transfer functions are created based on filter placements and respective outputs);

adding white noise as a correction procedure by increasing the power spectral energy and alleviate ill-conditioning (see col 16 lines 6- col 17 line 4, A speech signal is regarded analytically as being composed of an excitation signal and a formant transfer function. The excitation component is further classified as voiced or unvoiced, depending upon whether or not there is a fundamental frequency imparted to the air stream by the vocal cords. If there is a fundamental frequency imparted to the air stream by the vocal cords, then the excitation component is classified as voiced. If the excitation is unvoiced, then the excitation component is simply classified as white noise.)

Chen fails to disclose estimating of the power spectrum of one of the store packets.

Gustafsson discloses estimating of power spectrum during speech pauses or breaks in packet transmission (see Figs 1, 2 and col 3 lines 45-65).

Power spectrum estimation allows for noise reduction amongst users by filtering a noisy input signal and outputting a noise reduced output signal and therefore offering a gain of the overall power spectrum and enhancing perceptual quality of the received signal.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate a power spectrum estimation processor to reduce output noise and in-turn increase the gain function and thus increasing perceptual quality of the received signal.

Regarding claim(s) 2 and 5, Gustafsson discloses use of Welch's averaged periodogram method for power spectral estimation (see col 6 lines 11-63).

Regarding claim 4, Chen discloses the use of an additional switch, one operable by packet loss detector 110, 130 (Fig 2) and switch connected to the buffer 120 (Fig 1).

Response to Arguments

Applicant's arguments filed December 27, 2004 have been fully considered but they are not persuasive.

With respect to claims 1 and 3, applicant contends "the use of white noise as a correction factor, as taught by Chen, is not the equivalent of using white noise as the filter excitation signal for the purpose of generating lost packets". Chen discloses the use of white noise as correction factor for increasing the power spectral energy of all bits concerned so that they may fill voids where appropriate. The term "white noise" is often used when referring to a signal or vibration where the spectral density is flat with respect to frequency. A speech signal is regarded analytically as being composed of an excitation signal and a transfer function. The excitation component is further classified as voiced or unvoiced, depending upon whether or not there is a fundamental frequency imparted to the air stream by the vocal cords. If there is a fundamental frequency imparted to the air stream by the vocal cords, then the excitation component is classified as voiced. If the excitation is unvoiced, then the excitation component is simply classified as white noise. Such noise functions are characterized by their power spectrum per unit frequency interval. For excitation function feature vector formation,

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either a pattern (or curve fit) of the spectrum can be stored, or a numerical value can be stored which represents one of the small number of unvoiced excitation spectra needed for an application. Thus, Chen discloses the smoothing application protocol for a white noise insertion, which can be applied to stored packets as well. The white noise created packet may then be transmitted within the voice signal to fill missing packets and/or voids and allow for a uniform spectral density. Thus since Chen does disclose the proper application of "white noise", claims 1 and 3 stand rejected. Furthermore, claims 2, 4, and 5, which are directly dependent on claims 1 and 3, also stand rejected by virtue of identified limitations within the subject references.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

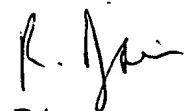
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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raj Jain whose telephone number is 571-272-3145.

The examiner can normally be reached on M-F.

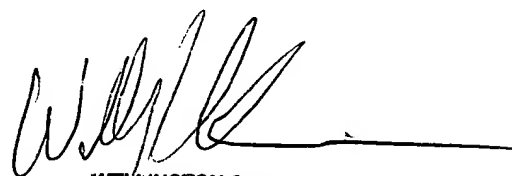
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 571-272-3134. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9306 for regular communications and (703) 872-9306 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2600.



RJ

April 19, 2005



WELLINGTON CHIN
SUPERVISORY PATENT EXAMINER